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| PRE-APPEAL BRIEF REQUEST FOR REVIEW | | Docket Number (Optional) KCX-858 (18662) | |
| I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ Signature _____ Typed or printed name _____ | Application Number 10/687,004 | | Filed October 16, 2003 |
| | First Named Inventor John Urlaub | | |
| | Art Unit 1794 | Examiner Walter Aughenbaugh | |

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

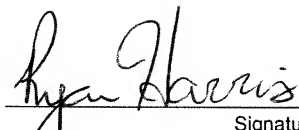
This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)
- ☐ attorney or agent of record.
Registration number _____
- ☒ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 58,662


Signature

Ryan P. Harris

Typed or printed name

864-271-1592

Telephone number

August 18, 2008

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
|-----------------------------------|---|------------------------------|
| In re Application: Urlaub et al. |) | Examiner: Walter Aughenbaugh |
| |) | |
| Serial No: 10/687,004 |) | Group Art Unit: 1794 |
| |) | |
| Filed: October 16, 2003 |) | Confirmation No: 7451 |
| |) | |
| Title: High Surface Area Material |) | Deposit Account No: 04-1403 |
| Blends for Odor Reduction, |) | |
| Articles Utilizing Such Blends |) | Customer No: 22827 |
| and Methods of Using Same |) | |

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Commissioner for Patents
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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

In conjunction with the filing of a Notice of Appeal, Applicants respectfully request review of the basis of rejections of the pending claims.

Claims 34-38 and 41-57, including independent claim 34, are currently pending in the present application. Independent claim 34, for instance, is directed to a package comprising a paper product and a packaging material that encloses the paper product so that a headspace is defined therebetween. The package also contains metal modified nanoparticles having an effective particle diameter of less than about 500 nanometers. The nanoparticles are formed from silica, alumina, or a combination thereof. The metal modified nanoparticles are configured to neutralize gaseous or odorous compounds within the headspace. As a result of the claimed invention, odors and other undesired gases may be removed from the headspace of, for instance, bathroom tissue and paper towel products.

In the Office Action, independent claim 34 was rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,740,406 to Hu, et al. in view of RE 32957 to Elias. Hu, et al. is directed to activated carbon particles coated with a material containing a binding agent and a masking agent (e.g., pigment or dye) that provides opacity and optionally color to the material. Hu, et al. provides a lengthy list of various possible masking agents that may be employed. Within this

list, Hu, et al. briefly mentions that inorganic pigments may be used that are “extracted from earths, fossils, marble or other volcanic and sedimentary rocks in the form of silicates, carbonates, oxides, sulfides, and the salt of various metals, such as iron.” (Col. 2, ll. 23-26). The Office Action relies upon this lone citation of “metals” for the teaching of “metal modified” nanoparticles as required by claim 34.

Despite the Office Action’s assertion, however, Hu, et al. simply does not disclose nanoparticles “modified” with a metal as required by the present claims. In one embodiment of the present invention, for instance, a metal ion is “adsorbed” onto the nanoparticles due to differences in electric potential. In another embodiment, the metal is bonded to the nanoparticles to form a “coordinate” and/or “covalent bond.” In stark contrast, Hu, et al. simply describes an inorganic pigment that can be extracted in the form of a salt.

Furthermore, independent claim 34 requires that the nanoparticles are formed from silica (e.g., silica nanoparticles such as those available from Nissan Chemical under the designation SNOWTEX), alumina (e.g., alumina nanoparticles such as those available from Nissan Chemical under the designation ALUMINASOL), or a combination thereof (e.g., alumina-coated silica nanoparticles such as those available from Nissan Chemical under the designation SNOWTEX-AK). Such nanoparticles may be modified with a metal, such as copper, silver, gold, iron (II), iron (III), manganese, or a combination thereof. Although Hu, et al. does cursorily mention that minerals, such as silica, may be employed as a masking agent, they are used only as a coating for the particles of Hu, et al. Notably, however, the “particles” of Hu, et al. are formed from “activated carbon” and not silica, alumina, or a combination thereof as required by independent claim 34.

Even if a silica “masking agent” is somehow considered to satisfy the “nanoparticle” limitation of independent claim 34, the resulting particles would still lack certain features of independent claim 34. For example, although Hu, et al. may describe the use of an inorganic pigment (optionally in the form of a salt of a metal) as a masking agent, there is no teaching whatsoever in Hu, et al. to modify one masking agent (e.g., silica) with a completely different masking agent (e.g., salt of a metal) in an attempt to achieve the limitations of independent claim 34. Any such combination stems only from a hindsight review of the teachings of the present application, which is improper under an analysis under § 103.

The Final Office Action attempts to rebut this argument stating:

there is no need to modify one masking agent with another masking agent (where the latter is in the form of a salt of a metal) because Hu et al. teach that the inorganic pigments may be extracted in the form of a salt of a metal, so the inorganic pigments such as silica or alumina are disclosed by Hu et al. as being in the form of a salt of a metal. pg. 6, lines 2-5.

Applicants respectfully do not understand this reasoning. Specifically, Hu, et al. discloses that “inorganic pigments made of minerals can be extracted from . . . volcanic and sedimentary rocks in the form of . . . the salt of various metals.” A metal salt is an ionic compound composed of cations (positively charged ions – usually the metal) and anions (negative ions) so that the product is electrically neutral.

Again, as noted above and throughout the specification, in one embodiment of the present invention, a metal modified nanoparticle is formed by “adsorbing” a metal ion onto the nanoparticles due to differences in electric potential. The metal ion provides an active site for binding with odorous compounds. On the contrary, a neutral charged structure would not be as desirable. (For instance, see dependent claims 50 and 51 claiming the Zeta Potential).

Applicants do disclose how a metal salt could be utilized in the present invention:

Numerous techniques may be utilized to form a stronger bond between the transition metal and nanoparticles. Silica sols, for example, are generally considered stable at a pH of greater than about 7, and particularly between a pH of 9-10. When dissolved in water, salts of transition metals are acidic (e.g., copper chloride has a pH of approximately 4.8). Thus, when such an acidic transition metal salt is mixed with a basic silica sol, the pH is lowered and the metal salt precipitates on the surface of the silica particles. This compromises the stability of the silica particles. Further, at lower pH values, the number of silanol groups present on the surface of the silica particles is reduced. Because the transition metal binds to these silanol groups, the capacity of the particles for the transition metal is lowered at lower pH values. In order to ameliorate the pH-lowering affect caused by the addition of an acidic transition metal salt (e.g., copper chloride), certain embodiments of the present invention can employ selective control over the pH of the silica particles during mixing with the transition metal. The selective control over pH may be accomplished using any of a variety of well-known buffering systems known in the art. Para. [0042].

Thus, Applicants again express that to arrive at Applicants claimed metal modified nanoparticle, Hu, et al. would have to be somehow modified utilizing one masking agent (e.g., silica) and modifying it with a completely different masking agent (e.g., salt of a metal). Applicants submit that there is clearly no motivation in Hu, et al. or Elias to construct Applicants’ claimed structure.

Furthermore, the Office Action cites Elias in combination with Hu, et al. First, Elias fails to remedy any of the deficiencies of Hu, et al. noted above. Second, Elias is cited as allegedly

providing the motivation to one skilled in the art to take the masking agent of Hu, et al. and place it in paper product packaging. Specifically, Applicants claim “a packaging material that encloses the paper product and defines a headspace therebetween.” Fig. 3 of the present application is provided below for convenience:

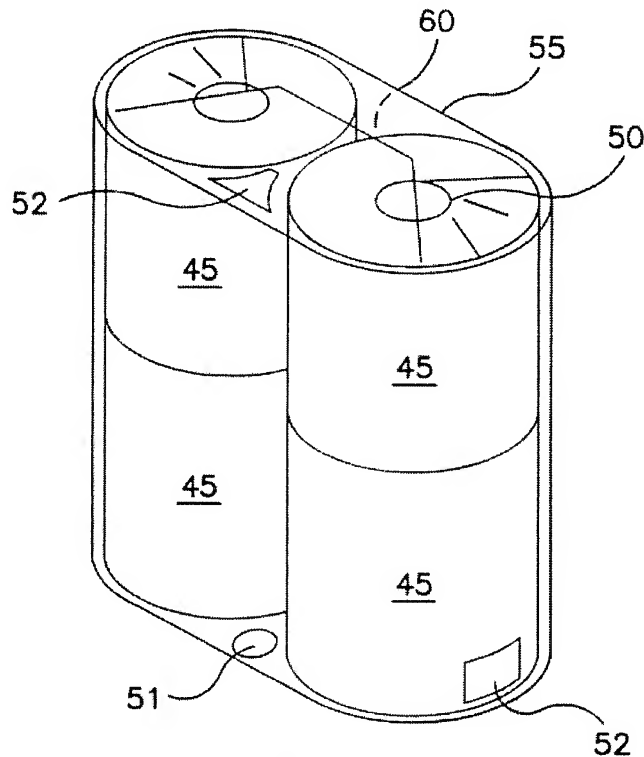
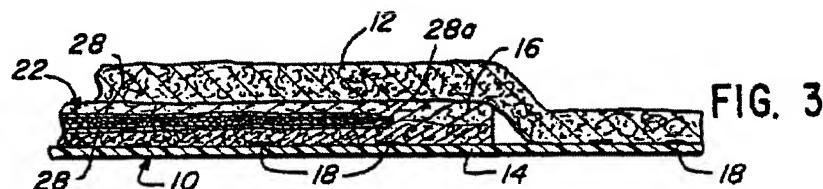
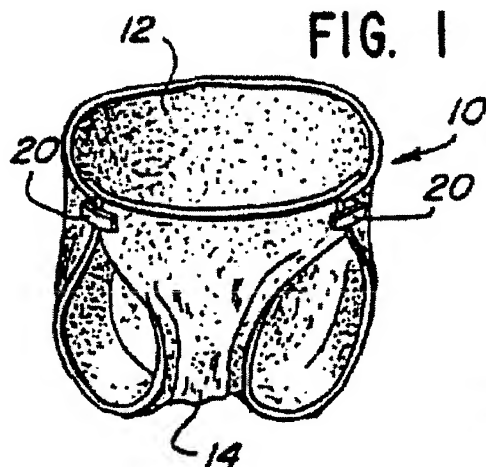


FIG. 3

As illustrated, in one embodiment, the blends of nanoparticles can be positioned on a disc insert **51** contained in the package, on an inside surface **52** of the product package itself, or alternatively, on a portion of the product **50**, contained within the package.

In stark contrast, Elias, as described in the Office Action, is directed to “the structure and composition of a diaper or sanitary napkin (see entire document).” Office Action of Oct. 18, 2007, pg. 4, lines 17-18. The Office Action asserts that the “packaging material” of Elias is “the combination of outer layers **12** and **14**.” *Id.* at pg. 5, lines 15-16. Furthermore, the Office Action asserts that the “headspace” of Applicant’s claim 34 can be obviated from “the space between the right ends of items **14** and **16** and item **12** in Fig. 3.” *Id.* at pg. 5, lines 17-18. Figs. 1 and 3 of Elias are reproduced below for convenience:



Respectfully, Applicants fail to see how the outer layers 12 and 14 somehow disclose "a packaging material that encloses the paper product and defines a headspace therebetween" as disclosed and claimed by Applicants. The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Applicants respectfully submit one skilled in the art would not reasonably interpret Applicants' claim language (when viewed in light of the specification) to be obviated by the structure disclosed in Elias.

Thus, for at least the reasons set forth above, it is believed that the present application is in complete condition for allowance and, therefore, request favorable reconsideration and allowance. However, Examiner Aughenbaugh is invited and encouraged to telephone the undersigned, should any issues remain after consideration of this Pre-Appeal Brief Request for Review. Please charge any additional fees required by this Amendment to Deposit Account No. 04-1403.

Respectfully requested,

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Date: August 18, 2008